

WHAT IS CLAIMED IS:

- 1                   1.       A storage disk device driver architecture comprising:  
2                   a RAID class driver having a physical device object representing a RAID  
3 system comprised of a plurality of disks, each disk associated with a functional device object  
4 adapted to interface with a physical device object representing the disk and providing a  
5 RAID-specific device identification.
- 1                   2.       The storage disk device driver architecture of claim 1, wherein the  
2 physical device object providing a RAID-specific device identification is included in a disk  
3 controller driver adapted to interface with a disk controller.
- 1                   3.       The storage disk device driver architecture of claim 1, wherein the  
2 physical device object representing the RAID system is adapted to provide a standard disk  
3 device identification to an operating system.
- 1                   4.       The storage disk device driver architecture of claim 1, wherein the  
2 RAID class driver is adapted to combine each disk into a RAID system.
- 1                   5.       The storage disk device driver architecture of claim 4, wherein in  
2 response to receiving a request to write a data block to RAID system, the RAID class driver  
3 is adapted to mirror the data block on at least a portion of the plurality of disks via the  
4 associated functional device objects.
- 1                   6.       The storage disk device driver architecture of claim 4, wherein in  
2 response to receiving a request to write a first and second data block to RAID system, the  
3 RAID class driver is adapted to write via the associated functional device objects the first  
4 data block to a first portion of the plurality of disks and to write via the associated functional  
5 device objects the second data block to a second portion of the plurality of disks.
- 1                   7.       The storage disk device driver architecture of claim 4, wherein in  
2 response to receiving a request to write a first and second data block to RAID system, the  
3 RAID class driver is adapted to write via the associated functional device objects an error  
4 correction block to a portion of the plurality of disks.

1                   8.       The storage disk device driver architecture of claim 1, wherein the  
2 physical device object representing a RAID system is a child of a RAID controller functional  
3 device object adapted to interface with a RAID controller physical device object.

1                   9.       The storage disk device driver architecture of claim 1, wherein the  
2 RAID class driver is adapted to configure the physical device object representing a RAID  
3 system according to RAID configuration data stored in a computer system configuration  
4 memory.

1                   10.      The storage disk device driver architecture of claim 1, wherein a first  
2 portion of the plurality of disks is associated with a first disk controller of a first type and a  
3 second portion of the plurality of disks is associated with a second disk controller of a second  
4 type.

1                   11.      The storage disk device driver architecture of claim 10, wherein the  
2 first type is an EIDE type controller and the second type is a SCSI type controller.

1                   12.      The storage disk device driver architecture of claim 10, wherein the  
2 first type is a serial ATA type controller and the second type is a parallel ATA type  
3 controller.

1                   13.      The storage disk device driver architecture of claim 10, wherein the  
2 second type is a controller for an external disk.

1                   14.      The storage disk device driver architecture of claim 1, wherein the  
2 RAID class driver is adapted to optimize data access by combining separate data access  
3 operations associated with a disk of the RAID system into a single data access operation.

1                   15.      An integrated circuit adapted to perform core logic functions of a  
2 computer, the integrated circuit comprising:  
3                   a RAID controller adapted to induce an operating system to load a RAID class  
4 driver having a physical device object representing a RAID system comprised of a plurality  
5 disks;  
6                   a first disk controller adapted to interface with at least a portion of the plurality  
7 of disks and further adapted to induce the operating system to load a disk controller driver,

8 wherein the disk controller driver is adapted to provide RAID-specific device identifications  
9 for the portion of the plurality of disks.

1 16. The integrated circuit of claim 15, wherein the physical device object  
2 representing the RAID system is adapted to provide a standard disk device identification to  
3 an operating system.

1 17. The integrated circuit of claim 15, wherein in response to receiving a  
2 request to write a data block to the RAID system, the integrated circuit is adapted to mirror  
3 the data block on at least a portion of the plurality of disks.

1 18. The integrated circuit of claim 15, wherein in response to receiving a  
2 request to write a first and second data block to the RAID system, the integrated circuit is  
3 adapted to write the first data block to a first subset of the portion of the plurality of disks and  
4 to write the second data block to a second subset of the portion of the plurality of disks.

1 19. The integrated circuit of claim 15, wherein in response to receiving a  
2 request to write a first and second data block to the RAID system, the integrated circuit is  
3 adapted to write an error correction block to at least a subset of the portion of the plurality of  
4 disks.

1 20. The integrated circuit of claim 19, wherein the integrated circuit is  
2 adapted to determine the value of an error correction block from the first and second data  
3 block.

1 21. The integrated circuit of claim 15, wherein the integrated circuit is  
2 adapted to configure the physical device object representing a RAID system according to  
3 RAID configuration data stored in a computer system configuration memory.

1 22. The integrated circuit of claim 15, further adapted to interface with a  
2 second disk controller, wherein the second disk controller adapted to interface with at least a  
3 second portion of the plurality of disks and further adapted to induce the operating system to  
4 load a second disk controller driver, wherein the second disk controller driver is adapted to  
5 provide RAID-specific device identifications for the second portion of the plurality of disks.

1 23. The integrated circuit of claim 15, further including a second disk  
2 controller adapted to interface with at least a second portion of the plurality of disks and

3 further adapted to induce the operating system to load a second disk controller driver,  
4 wherein the second disk controller driver is adapted to provide RAID-specific device  
5 identifications for the second portion of the plurality of disks.

1                   24.     The integrated circuit of claim 23, wherein the first disk controller is of  
2 a first type and the second disk controller is of a second type.

1                   25.     The integrated circuit of claim 24, wherein the first type is an EIDE  
2 type controller and the second type is a SCSI type controller.

1                   26.     The integrated circuit of claim 24, wherein the first type is a serial  
2 ATA type controller and the second type is a parallel ATA type controller.

1                   27.     The integrated circuit of claim 24, wherein the second type is a  
2 controller for an external disk.